UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,483	11/24/2000	Toshio Hasegawa	200089US3	3527

16

22850 7590 09/02/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
VANOY, TIMOTHY C	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/718,483	Applicant(s) HASEGAWA
	Examiner VANOY	Group Art Unit 1754

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to ~~communication(s) filed on~~ THE AMENDMENT DATED Aug. 6 2003 (Paper #15).

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 26 AND 34-49 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 26, 34-44, 48 AND 49 is/are allowed.

☒ Claim(s) 45, 46 AND 47 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☒ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 45 and 46 are rejected under 35 U.S.C. 102(b) as being aniticipated by U. S. Pat. 3,806,583.

Figure 1 and the discussion of figure 1 set forth in col. 3 ln. 58 to col. 4 ln. 33 in U. S. Pat. 3,806,583 illustrates a method for removing an impurity gas (hydrogen gas) present in a Xe/Kr gas (10) emitted from a nuclear power reactor (please also see col. 1 lns. 7-10 in U. S. Pat. 3,806,583), comprising:

mixing a reaction gas (i. e. the air or O_2 (36)) with the impurity gas (i. e. hydrogen) in the exhaust gas and combusting the hydrogen within the exhaust gas with the air or O_2 in a burner (35) to produce an exhaust gas containing water (i. e. the "reaction by-product" of applicant's claim 45), and

passing the water-containing exhaust gas through a condenser (38), which is equipped with what appears to be a coolant fluid (39) passing through an indirect heat tube within the condenser (38), so that the water is condensed out of the exhaust gas, as set forth in applicants' claims 45 and 46.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having "ordinary skill in the art" has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

Claims 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. 3,806,583.

Figure 1 and the discussion of figure 1 set forth in col. 3 ln. 58 to col. 4 ln. 33 in U. S. Pat. 3,806,583 illustrates a method for removing an impurity gas (hydrogen gas) present in a Xe/Kr gas (10) emitted from a nuclear power reactor (please also see col. 1 lns. 7-10 in U. S. Pat. 3,806,583), comprising:

mixing a reaction gas (i. e. the air or O_2 (36)) with the impurity gas (i. e. hydrogen) in the exhaust gas and combusting the hydrogen within the exhaust gas with

the air or O_2 in a burner (35) to produce an exhaust gas containing water (i. e. the "reaction by-product" of applicant's claim 45), and

passing the water-containing exhaust gas through a condenser (38), which is equipped with what appears to be a coolant fluid (39) passing through an indirect heat tube within the condenser (38), so that the water is condensed out of the exhaust gas, as set forth in applicants' claims 45 and 46.

The difference between the applicants' claims and U. S. Pat. 3,806,583 is that applicant's claim 47 sets forth that the amount of the reaction gas mixed with the impurity gas is at least twice the amount of the impurity gas (present in the exhaust gas), *however* it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made *because* it is *prima facie* obvious to add a stoichiometric excess of reaction gas relative to the quantity of impurity gas present in the exhaust gas only to achieve the expected advantage of ensuring that there is enough reaction gas to react with and remove all of the impurity gas, consistent with the discussion of the court decisions set forth in the first portion of section 2144 in the MPEP (Rev. 1, Feb. 2003).

Claim 26 has not been rejected under either 35USC102 or 35USC103 because U. S. Pat. 5,788,747 is directed to the deposition of aluminum on a semiconductor wafer by using dimethylaluminum hydride (i. e. DMHA) (please see col. 2 ln. 66 to col. 3 ln. 6 in U. S. Pat. 5,788,747, for example), which is not among the processes listed in the 1st full paragraph set forth in claim 26.

Claims 34-38 have not been rejected under either 35USC102 or 35USC103 because these claims require that the reaction by-products be condensed out of the gas, however the process of U. S. Pat. 5,788,747 requires that the reaction by-product be precipitated out of the gas: please see col. 7 lns. 63-68 in U. S. Pat. 5,788,747.

Claims 39-44 have not been rejected under either 35USC102 or 35USC103 because U. S. Pat. 5,788,747 does not teach or suggest that the "deleterious material removing means" (40) condenses and solidifies the impurities in the exhaust gas, in the manner that the claim 39 requires the "trap mechanism" to condense and solidify the impurities.

Claims 48 and 49 have not been rejected under either 35USC102 or 35USC103 because U. S. Pat. 3,806,583 does not teach or suggest that the process gas being treated contains either $TiCl_4$ (claim 48) or WF_6 (claim 49).

Response to Arguments

The applicants' arguments with respect to claims 45-47 have been considered but are moot in view of the new ground(s) of rejection.

U. S. Pat. App'n. No. US 2003/0113986 A1 disclosing a method for producing a semiconductor device is made of record.

The applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See

MPEP § 706.07(a). The applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final Office action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 703-308-2540. The examiner can normally be reached on 9 hr. days Mon-Thurs, and Fri. afternoons.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 703-308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Timothy C. Vanoy
Patent Examiner
Art Unit 1754

Timothy Vanoy/tv
Aug. 29, 2003

STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700